

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-13 (Canceled).

Claim 14 (Currently Amended): The apparatus of claim ~~13~~ 15, wherein said optical element includes a hologram element configured to give the positive order and negative order light beams the optical aberration such that the positive order and negative order light beams form focused spots having optical aberrations with opposite polarities.

Claim 15 (New): An aberration state detection apparatus configured to use an information medium including a recording layer or reflecting layer protected by a transparent layer which has predetermined thickness and may be accompanied by refractive index irregularity in a predetermined range and thickness irregularity in a predetermined range,

said aberration state detection apparatus comprising:

a light sending system including an objective lens configured to focus light from a light source onto a recording surface of said information medium, wherein an optical aberration is given to said light;

a detection optical system configured to detect light from said information medium;

a detector configured to detect a state of occurrence of the optical aberration of said light, focused on the recording surface of said information medium by said light sending system, from a detection result obtained by said detection optical system; and

an optical element configured to generate a positive order light beam and a negative order light beam from the light of said light source, wherein

the detector is configured to detect the state occurrence of the optical aberration, using the positive order and negative order light beams, and

the positive and negative order light beams are beams of opposite polarities being given in advance, so that an optical aberration by which a first light beam is focused to a position farther from the objective lens than the surface of the recording layer of the information medium and an optical aberration by which a second light beam is focused to a position closer to the objective lens than the surface of the recording layer are of opposite polarities, and sizes of separate light spots formed by the positive and negative order light beams depend on the thickness irregularity of the transparent layer.